The Herbicide Market

AQUATIC WEEDS

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AQUATIC weeds, pond weeds, or lake grass—water junk, scum or flotsam—alligator weed, chara, hydrilla or hyacinth, call it what you like. Unwanted aquatic weeds and algae are increasingly prevalent throughout the United States . . . and represent a potentially large and viable market for professional applicators.

How big is anybody's guess. Excluding tidal areas, aquatic environments in the United States exceed 42 million acres. But 42 million plus acres of market? Not really.

Three major factors must combine to create a market—a body of water, aquatic vegetation and people who want or need to use the water. Water, weeds and people. Market potential is everywhere. But, so far, we've only seen the "tip of the iceburg."

Commonly, the market is identified as lakes and ponds used for recreation and fishing. Only in Florida and other selected southern states has real interest been generated for other purposes—specifically, control of aquatic weeds and algae in flood control and irrigation canals.

Water weeds and algae create a number of problems. In recreational and fishing areas, they limit boating and swimming enjoyment, tangle fishing lines and may create an imbalance in fish populations. In farm and industrial uses, they may reduce the holding capacity of the lake, pond or canal by as much as one third, restrict or clog irrigation equipment, and lower the efficiency of cooling towers and pumping equipment. And in almost all cases, when allowed to grow, they become smelly and ugly eye-sores, reducing property values. Also, algae and aquatic weeds provide a home for mosquitos and other insects.

The market, then, is certainly not limited. The key seems to be identifying it within your local area. Some of the places to look include: lake associations, estates, farm ponds (irrigation or recreation), forest preserves, resorts, lakefront property owners, fee fishing lakes, hatcheries, golf courses, camps, flood control districts, real estate developments (with man-made or natural lakes), dairy and feedlot operators (with settling pond requirements), water companies (private & municipal), industrial companies with cooling towers or water emphasis landscaping, rice farmers, marinas, and irrigation districts.

Obviously, the market opportunities vary in different geographic regions. The Great Lakes region has a high number of weed-infested lakes. Southern California has, perhaps, the greatest number of golf courses with water-hazards per capita in the United States. Florida has a great number of flood and irrigation canals while parts of Idaho and Washington have some of the largest irrigation systems in existence.

Pennwalt Corporation, one of the major manufacturers of aquatic weed control herbicides, is seeing sales trends shift from primarily the recreational lake and farm pond markets in the north-central United States and Florida to more diversified markets throughout the nation.

Why go into a business of this type? Profit! Also, the professional aquatic vegetation control operator is in very short supply. As an adjunct to an already existing professional herbicide applicator, it becomes an added service to offer customers and a further means of applying already existing equipment and technology.

Control of aquatic weeds is generally achieved through one of three methods; mechanical, biological and chemical.

Mechanical cutting, or pulling, is generally very short-lived. Plants frequently return within weeks. Dredging or drying up the canal or pond and scrapping it clear can be effective, as these processes eliminate fertile deposits and deepen the canal or pond. Unfortunately, this cannot always be done.

Mechanical harvesting equipment is avaliable for large operations. It is expensive, often inefficient and slow. Further, it frequently spreads the weed infestation as it drags cut weeds from one part of the lake to another. Finally, the "cut" weeds and algae must still be disposed of —frequently by the truck-load. Labor also is a very costly factor. With practically all mechanical aquatic weed control methods, the cost of efficient control is too expensive for practical use.

Biological methods for controlling aquatic weeds have been popular in concept over recent years. Biological control takes many forms. The primary biological methods of control has been to stimulate the growth of natural weed and algae enemies; stocking these water bodies with plants, fish, or other microorganisms that will attack the undesired vegetation. In our opinion

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be placed for state jobs — March-April — we have an idea how much time we'll be tied up with fertilizer application," says Joe Powell, applicator. "If fall weather allowed completion of most of it, we try to get some highway weed and brush control work. It offers good margins and a chance to utilize idle equipment and labor."

Based on our experience in highway weed control we estimate that per mile herbicide expenditures range from as little as $2 to as much as $21. Selective herbicides find widespread geographic usage while the larger use of sterilents and contact herbicides is found mainly in the south where bermuda and johnsongrass are serious problems.

Ciba-Geigy herbicides are used extensively for highway weed control. Because of their broad control spectrum and universal geographic adaptation, their popularity continues to increase.

Pramitol is used primarily for controlling hard to get perennial broadleaf weeds and grasses. This product in combination with Princep provides control of both deep-rooted perennials and late-germinating broadleaf weeds and grasses. A new use for Pramitol 25E that is growing rapidly is in combination with asphalt cutbacks to prevent degradation by weed breakthrough after they are applied on shoulders, on cracked asphalt surfaces, country roads and under highway fences and guard rails. This treatment extends the life of the new surface resulting in considerable savings in time and labor.

Princep is a broad spectrum herbicide that is particularly effective in controlling shallow-rooted annual weeds. An additional asset is its safety to desirable trees, shrubs and some ground covers. Princep is used extensively for weed control around ornamental plantings and in highway spray programs where safety to deciduous fruit and nut trees and/or citrus is an important consideration.

AAtrex and Atratol (AAtrex plus Pramitol) are also used for highway weed control, especially in the Pacific Northwest.

Private applicators have the tools and knowledge to tap this large potential market. They have the skills necessary to meet the growing and increasingly specialized demands of highway work and the modern herbicides to fit virtually any job requirement. With the added benefit of being able to keep expensive equipment working more of the time, highway weed control appears to be an area the applicator should investigate as a means of expanding his business. □

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biological controls have simply not been proven effective. They may create a different nuisance than the one they were employed to control, and in turn, require additional control measures.

Chemical herbicides have proven the most practical. Comparatively, they provide low-cost aquatic weed control with minimum labor. The algae and aquatic weeds are killed and decompose, eliminating the need for physical removal to another site, or the need for additional control measures. In many cases, they are the only means of economic control —for example, in a dry, hot western summer where continued irrigation is mandatory for healthy crops.

There are a variety of aquatic herbicides available produced by various companies including Chevron, Dow, Pennwalt, Shell and 3-M. Some of these companies offer aquatic herbicides with several variations effective on nearly all aquatic weeds and algae found in water environs.

Perhaps it is prudent, at this time, to point out that there are aquatic weed control chemicals—and chemicals that kill water weeds, algae and other vegtation also. Water is a lifesource of the human—yet, all too frequently, chemicals known to have toxic residues on fish and/or humans are used against water weeds and algae.

Sometimes these chemicals are also effective against other useful vegetation—and have been known to kill valuable economic crops many miles "down-stream" from the point of application. The EPA (Environmental Protection Agency) and many states have laws or controls applicable for use of herbicides in such water bodies. In many states, application of aquatic weed and algae control chemicals may only be applied by licensed applicators. In others, permits must be obtained. In still others, no legislation exists. And, of course, there exist various combinations of the requirements. Most professional herbicide applicators are aware of such laws in their states — but it is always wise to check.

The season for aquatic weed control exists from thre months to yearround — depending on geographic region and the nature of the market. Summer weed control is particularly prominent in areas of the country where lakes and ponds are frozen throughout thre winter.

Conversely, it is this winter season that represents one of the best selling opportunities—since it provides the opportunity to "pre-sell" aquatic weed control . . . making it possible for the professional applicator to book jobs in advance and plan ahead to the busy months. It also makes control easier, since aquatic weeds are best controlled during their early growth periods.

There is a strong trend in aquatic weed control toward greater professionalism. Fewer and fewer applicators are working job by job — but instead, are providing year-round complete aquatic vegetation control management on contract. Further, it remains one of the few rapidly growing markets in the agricultural and/or herbicidal chemical application market.

Many applicators already have on hand the necessary equipment to enter the chemical segment of aquatic weed control. Practically all of the aquatic chemicals come in liquid, granular or pellet formulations. The few powder formulations on the market are generally tank-mixed with other liquid formulations before application.

For the professional applicator, probably the most common equipment is the boat combination. Judging investment is still difficult because of the wide variation in boats, motors, pumps, etc. However, an estimate in round figures for a set-up that could handle most sizable jobs would include:

Boat—16 ft.	Approx.	$ 300.00
Motor—9.5 h.p.	Approx.	350.00
Trailer	Approx.	250.00
Pump and fittings	Approx.	250.00
Miscellaneous equipment Safety goggles, gloves, oars, tools, etc.	Approx.	150.00
	TOTAL	$1,300.00

Obviously, these figures would vary throughout the country. They would also vary depending on the "newness" of the equipment and the amount of equipment already on-hand. And, finally, they would vary depending on the market intended.

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ment to meet specific needs.

Selling the concept of weed control may not be an easy thing to do. Aesthetics is still the major reason for controlling grassy and broadleaf weeds in most fine turf. They just don't look pretty. Economics also enters the picture.

Desirable grasses revert to a relatively dormant state during the hot summer months. Weeds don't. They flourish. The result is that weeds are about all that is mowed in non-irrigated turf during the hot months. One or two effective herbicide applications should save your customer money by eliminating additional mowing costs created by weeds.

Economics of another sort enters the golf course market. People generally prefer to play their game on a well-kept course. Weeds could send players to other courses, reducing revenues for the weedy course.

Tall weeds that dry out in late summer present a fire hazard and also do a good job of serving as hiding places for rats and other undesirable varmints. Weeds also produce pollens—a cause of allergies. Weedy vacant lots in cities create eyesores. So, as you can see, there are a number of good reasons for controlling weeds.

Another factor to consider is the application of herbicides in the fall. Traditionally, about 80 percent of the work usually has been done in the spring. This concentrates your activities into a relatively short period. Tnis time span can be further reduced (and often is) by rain, which can make it impossible for application equipment to get onto the turf. This, in turn, can stretch your capabilities and prevent you from taking on new customers.

Today, however, there is a trend away from application solely in the spring. Many universities are recommending fall application of herbicides to control and prevent broadleaf and grassy weeds from appearing next spring. This not only gives your business more flexibility but also gives you the opportunity to apply chemicals during the fall when weather conditions are usually more favorable. Chemical drift is less of a problem in tne fall because most vegetables, flowers, and other annual plants have completed their growing cycles.

The fall also is the best time to seek new business. It's usually the time when those responsible for turf care are planning their budgets for the following year. Once a potential customer has committed money for the year, you probably will not be able to get any of his business. By contacting him early you have a good opportunity to work your program into his future plans.

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For example, if you intended to work exclusively in the golf-course segment of the industry, you might not need a boat at all—or a small skiff would easily suffice. At the other extreme, if your entire market were irrigation and flood canals, an air-powered hydroplane skimmer with booms or sunken drag hoses will probably be necessary.

Interestingly, it generally doesn't take a lot to pay off the initial investment and begin to recognize valid profits. Using the outfit above, lets take a typical example.

Generally, lakes are not treated across the entire surface. This is because aquatic weeds in deeper segments of the lake are not bothersome and/or simply do not get sufficient sunlight to grow. On a small 10 acre job along the shoreline of a lake, treatment would usually average out to about four feet deep. Thus, an applicator would be treating 40 acre feet.

The chemical to be used would vary depending on the treatment necessary and the type of aquatic weed to be controlled. In Michigan, for example, Aquathol Plus will usually do the job at 3 ppm (parts per million). Three ppm is equal to 66-⅔ galons for the job. To make it easier to figure and provide a bit of a safety factor, lets use 70 gallons.

The chemical cost to the professional applicator for Aquathol Plus was $10.90 in 1973—or 763.00 for 70 gallons. Many applicators, on a job of this size, just double the chemical cost and charge the customer that amount. Others sell the chemical at the retail price and add on an application charge. The application fee may vary depending on the size, distance traveled, location and difficulty of the job.

For this job, let's use the second method. Seventy gallons at a retail price of $13.00/gallon equals $910.00. If an application fee of $10.00 per acre foot is used (total = $400), then the total bill to the customer equals $1,310.00. The applicator has a dollar profit of $547.00. As you can see, it does not take too much time to write-off an initial investment. The professional's key is balancing his investment to the potential market in his area; or to the market he seeks to penetrate.

Just exactly what is the job? Well, the first element is to identify the market or markets. Beyond that, there are essentially six steps.

1. Meet with your customer and discuss their particular needs. Does he want to fish, swim, boat or waterski—or is his an industrial requirement such as irrigation or flood control; or purely asehetic. Different chemicals do different jobs.

2. Survey the area to be treated to obtain information concerning the aquatic vegetation, water quality and storage capacity. Identification of the specific water weeds and/or algae is paramount to successful control—and there are well over 25 different varieties (generally easily identifiable from state manuals or chemical supplier technical information sheets).

3. Select the proper materials to do the most effective job, consistent with state and federal environmental protection laws. I reemphasize the state laws because they vary widely from state to state even in similar geographical regions.

4. Offer your customer your contract and clearly outline what he will receive, and what payment schedule will be made. Some applicators provide "easy payment" schedules of 50% down and the remainder in 30 days—or in two payments of 30 and 60 days. Most yearround management contracts guarantee a specific performance or control ratio.

5. Apply the herbicide. Obviously, the length of time required to apply the herbicide varies widely with the type of application and the type of equipment. With boat or mechanical spreaders the average is probably between 5 and 10 acres per hour.

6. Inspect the treated area periodically to determine if adequate weed control has been achieved.

For the professional applicator, penetrating the aquatic weeds market may prove a very satisfactory and financially rewarding opportunity . . . or it may not be "your cup of tea."

At Pennwalt Corporation we have a large number of technical sales representatives that specialize in the aquatic weed control market. Tnese people are experienced and helpful and willing to assist in the investigation of aquatic markets and business development.□